

Audit of USAID/Guatemala's Road and Bridge Repair Activities

**Audit Report No. 1-520-00-006-P
September 27, 2000**

San Salvador, El Salvador



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

RIG/San Salvador

September 27, 2000

MEMORANDUM

FOR: USAID/Guatemala Director, George Carner

FROM: RIG/A/San Salvador, Timothy E. Cox

SUBJECT: Audit of USAID/Guatemala's Road and Bridge Repair Activities (Report No. 1-520-00-006-P)

This memorandum is our report on the subject audit. In finalizing the report, we considered your comments on the draft report. Your comments on the draft report are included in Appendix II.

The report contains two recommendations for your action. Based on the information provided by the Mission, a management decision has been reached on both recommendations. A determination of final action for the recommendations will be made by the Office of Management Planning and Innovation (M/MPI/MIC) when planned corrective actions are complete.

I appreciate the cooperation extended to my staff during the audit.

Background

Hurricane Mitch struck Guatemala in late 1998, causing tremendous damage to the agricultural sector, the primary source of livelihood for the majority of those affected. The Government of Guatemala and the United Nations estimate rehabilitation and reconstruction costs at \$550 million. The damage to the roads and bridges infrastructure was great with 53 bridges damaged and 68 destroyed, as well as 90 affected stretches of road.

In May 1999, Congress passed the Emergency Supplemental Appropriations Act, creating the Central America and the Caribbean Emergency Disaster Recovery Fund, which contained a total of \$621 million in reconstruction assistance for countries hit by Hurricanes Mitch and Georges and for earthquake damage in Colombia. Because of the extent of damage caused by Hurricane Mitch, Guatemala received \$28 million of the \$621 million.

To combat the effects of Hurricane Mitch, USAID/Guatemala and the Government of Guatemala signed a Special Objective Grant Agreement (SOAG), dated July 22, 1999, to achieve the joint special objective “*Rural Economy Recovers from Mitch and is Less Vulnerable to Disasters.*” Under one of the three intermediate results for this objective, “Agricultural Productivity Recovered on More Sustainable Basis,” USAID/Guatemala included approximately \$3 million for rural road repair in the Department of Alta Verapaz and the Ixcán region of the Department of Quiché. USAID/Guatemala is working through two implementing entities—the Cooperative Housing Foundation (CHF) in Ixcán and the Asociación Nacional del Café (ANACAFE) in Alta Verapaz.

Funding for the Roads and Bridges Activities is as follows:

Organization	USAID Amount	Cost Sharing	Total	End Date
CHF	\$1,994,622	\$635,000	\$2,629,622	September 30, 2001
ANACAFE	1,015,333	0	1,015,333	September 30, 2001
Total	\$3,009,955	\$635,000	\$3,644,955	

USAID/Guatemala’s cooperative agreement with CHF provides for the construction of 13 vehicular bridges, repair of one vehicular bridge, and rehabilitation of 100 kilometers of gravel roads in Ixcán in order to guarantee the local population’s access to health care, education services and markets.

The cooperative agreement with ANACAFE provides a total of \$3,738,286 under the SOAG; however, only \$1,015,333 of this amount is for road rehabilitation. The approved work plan for the project provides for the maintenance and repair of 130 kilometers of roads in coffee producing regions of the Alta Verapaz department in order to facilitate the maintenance of coffee plantations and the transport of coffee harvests to the market place. The remaining \$2,722,953 of the cooperative agreement provides funding for other activities, such as maintenance and renewal of coffee plants and other crops, construction and renovation of coffee processing centers, construction of research and training centers for coffee farmers, and establishment of a regional communications network.

Audit Objectives As part of its fiscal year 2000 audit plan, the Regional Inspector General/San Salvador performed an audit to answer the following questions:

- Are USAID/Guatemala's road and bridge reconstruction activities on schedule to achieve the planned outputs?
- Has USAID/Guatemala implemented an adequate monitoring system for its road and bridge repair activities?

The audit scope and methodology is presented in Appendix I.

Audit Findings **Are USAID/Guatemala's road reconstruction activities on schedule to achieve the planned outputs?**

For the CHF construction projects, the activities are currently on schedule to be completed by September 30, 2001 within the amount currently budgeted. However, regarding ANACAFE, higher than expected reconstruction costs and a lack of a firm action plan for financing the remaining road construction indicate that planned outputs cannot be achieved within the current project budget.

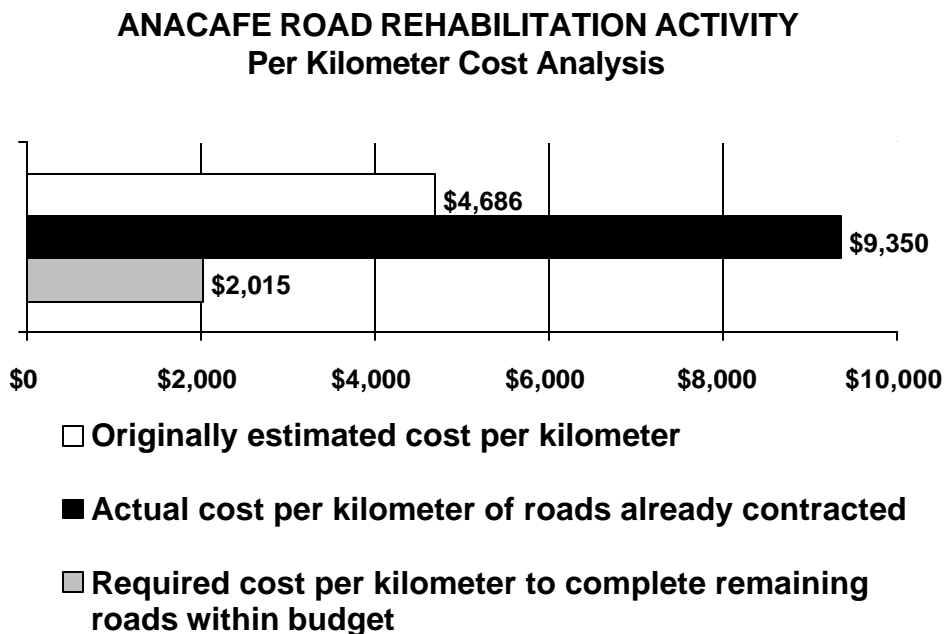
The accomplishments of both CHF and ANACAFE have been significant during the first eight months of project implementation. CHF has sub-contracted with the Asociación para el Mantenimiento Vial de Ixcán (AMVI) to rehabilitate 100 kilometers of road on the Franja Transversal del Norte highway and is on schedule to complete 50 kilometers of roads in the first year of the project. In addition, CHF has completed construction on one bridge and is on schedule to complete five bridges during the first year of the agreement. All 15 planned bridge projects are scheduled to be completed by June 2001.

For ANACAFE, sub-contracts have been signed for 60.7 kilometers of road rehabilitation—just under half of the 130 kilometers in the original ANACAFE proposal. Fifty-three kilometers is planned to be completed in the first year of the agreement. However, to date, ANACAFE has not developed a firm plan of action to complete the remaining 69.3 kilometers of road rehabilitation work as discussed in more detail below.

Reconstruction Costs Significantly Higher Than Original Estimates

ANACAFE's original proposal to USAID/Guatemala listed 15 road construction projects totaling 130 kilometers at a total cost of \$1,015,333, which is the entire amount budgeted for the road construction activities. However, since \$406,133 of the amount budgeted was for the purchase of road construction machinery, only \$609,200 was available for contracting with road construction firms for the rehabilitation of roads. During the negotiation of the cooperative agreement, ANACAFE, in supplemental information to its original proposal, clarified its intention to contract for the rehabilitation of 130 kilometers of roads for \$609,200—an average cost of \$4,686 per kilometer.

However, to date, ANACAFE has contracted for the construction of 60.7 kilometers at a cost of \$567,555, which, at \$9,350 per kilometer, is twice the originally proposed cost. Currently, only \$139,662 of the original \$1,015,333 budget is available for further construction efforts, which would require building the remaining 69.3 kilometers at a price of \$2,015 per kilometer—about 22 percent of the cost per kilometer of the road rehabilitation contracts that have been signed to date. This information is summarized in the chart below:



ANACAFE officials mentioned several factors that contributed to the higher than anticipated costs. One factor cited was the lack of adequate information on the cost of building roads of the type being built. ANACAFE had no

previous experience in building roads or contracting for the construction of roads. At the time of the preparation of the proposal, the project's civil engineer had not yet been hired and ANACAFE did not have the technical expertise to make accurate estimates. In order to estimate the costs, in August 1999 ANACAFE requested local construction firms to provide general estimates for the cost of the construction of gravel roads. However, in May 2000, when the construction firms bid on the specific roads being built under this project, prices were higher due to the mountainous terrain of the area and the need for additional drainage on the roads which was not originally anticipated. Officials also cited a significant increase in fuel costs during the period of the proposal and the time of signing the construction contracts.

Although ANACAFE officials have reiterated their commitment to complete the rehabilitation within the current budget by utilizing the project's road construction machinery and contributions from the local communities, they have stated that they will not have an action plan until mid to late September 2000. As a result of the above, we are making the following recommendation:

Recommendation No. 1: We recommend that USAID/Guatemala:

- 1.1 obtain a firm plan of action from the Asociación Nacional del Café for timely completion of the road rehabilitation program within current budgetary levels;*
- 1.2 review the plan to determine if the completion of the program is feasible; and*
- 1.3 if necessary, determine what adjustments should be made to the project.*

Has USAID/Guatemala implemented an adequate monitoring system for its road and bridge repair activities?

USAID/Guatemala monitored the road and bridge repair activities by performing site visits to the construction areas, meeting with the implementing entities to discuss project implementation, and approving project work plans. However, we noted some areas in which the Mission could have more closely monitored the project activities as described in more detail below.

More Stringent Review of Work Plans Needed

The Mission's strategy in selecting both of the implementing entities for the roads and bridges activities was to work with organizations with which the Mission already had a working relationship and that had established networks in the affected regions of the country. In the Alta Verapaz department, ANACAFE had more than eight years of experience working with farmers in the coffee producing regions of the department, improving productivity and increasing farm incomes. However, the cost estimates for road construction in the ANACAFE proposal were not realistic, and actual costs were significantly higher than those originally proposed by ANACAFE as described in the previous section of this report.

The Mission did not perform a detailed cost analysis of the proposed road reconstruction costs to determine their reasonableness. A closer review of the proposed costs would have revealed that the construction of 130 kilometers of roads was not feasible given the project's road specifications and the mountainous terrain in which the construction was to take place.

USAID/Guatemala Not Informed of Significant Changes in the Status and Implementation of Project Work Plans

For the ANACAFE program, Mission officials did not indicate knowledge of the significant shortfalls in the program's funding. At the entrance conference, we were informed that the construction program was on target for completion and Mission officials stated that they were not aware of any obstacles to the project completion. Mission officials provided us with copies of the construction contracts signed by ANACAFE in May 2000. Our analysis of these contracts determined that over 90 percent of the amount budgeted for the construction contracts had been committed for less than half of the kilometers of roads to be built, indicating that planned program outputs may not be met. We also noted that, for two of the roads, Mission officials were not aware that the routing of the roads had to be changed due to local communities not allowing ANACAFE to widen roads in areas where coffee plants and other crops had been planted on a portion of the right-of-way.

In addition, under the CHF agreement, the original work plan included the construction of twelve concrete bridges, one Bailey bridge, and the repair of one Bailey bridge. However, CHF later decided not to build four of the concrete bridges because they were not considered as critical as other sites. In their place they identified five other sites where bridges will be built at approximately the same cost. However, CHF did not inform the Mission of these significant changes to the work plan. Mission officials stated that since it was not a contract, but rather a cooperative agreement, they did not think they needed to approve this type of change. However, the substantial

involvement clause of the cooperative agreement includes a provision for approval of the work plan. Thus, any significant change to such a plan should also be submitted to USAID/Guatemala for approval.

As a result of the above, project outputs have been significantly changed and, in the case of ANACAFE, could be significantly reduced. Based on the price of the roads already contracted, funding would only be available for 76 of the 130 kilometers—or 58 percent—of the kilometers planned to be built. Since ANACAFE signed the sub-contracts for construction in May 2000, closer monitoring by the Mission would have allowed them to take more prompt action to address the budgetary problems of the project. To date, no action has been required from ANACAFE to produce a firm plan of action to address these funding shortfalls. As a result of the above, we are making the following recommendation:

Recommendation No. 2: We recommend that USAID/Guatemala develop a more effective plan to (a) closely monitor the progress of the roads and bridges rehabilitation project in order to determine if planned results are being achieved on schedule; and (b) take corrective action to improve program performance in cases where they are not being achieved.

Management Comments and Our Evaluation

USAID/Guatemala expressed agreement with the findings and plans to implement the recommendations of our audit report. Based on the Mission's comments, management decisions have been reached for both recommendations.

**Scope and
Methodology****Scope**

We audited USAID/Guatemala's Road Reconstruction Activities in accordance with generally accepted government auditing standards. The audit was conducted at USAID/Guatemala from July 17, 2000 through August 4, 2000. Our audit included a site visit during the period July 24, 2000 to July 28, 2000, to the construction areas in the Department of Alta Verapaz and Ixcán region of the Department of Quiché.

The Road Reconstruction Activity had two categories of planned outputs to be completed by September 30, 2001: 230 kilometers of rehabilitated roads (130 kilometers rehabilitated by the Asociación Nacional del Café [ANACAFE] and 100 kilometers of the Franja Transversal del Norte highway rehabilitated by the Cooperative Housing Foundation [CHF]) and 14 new replacement bridges constructed and one Bailey bridge repaired also by CHF. Tables I through III in Appendix III contain a detailed listing of the bridges to be constructed by CHF and the rural roads to be rehabilitated by ANACAFE. Our review focused on whether the Road Reconstruction Activity was on schedule to achieve these planned outputs and whether USAID/Guatemala had implemented an adequate monitoring system for the activity.

Methodology

To answer the audit objectives, we interviewed responsible officials at USAID/Guatemala, as well as the two implementing entities—CHF and ANACAFE. In addition, we reviewed relevant documentation obtained from the three entities.

To determine whether road reconstruction activities were on schedule to achieve planned outputs, we reviewed documentation at USAID/Guatemala which included project design documents and the strategic objective grant agreement and its annexes including the project's activity description. These documents provided the project's funding, listed the expected outputs and identified the project timeframe. For CHF and ANACAFE, we reviewed progress reports that included work plans and milestones for achieving the planned outputs. We reviewed contract information from ANACAFE and quarterly reports to obtain current reconstruction costs. We reviewed records of site visits made by USAID/Guatemala personnel to the reconstruction areas.

In addition, we performed site visits to the construction areas to determine the extent of progress made to date on the construction activities. For CHF activities, we visited nine of the 15 sites for the construction and rehabilitation of bridges, including all five of the sites where construction had begun. Table I of Appendix III contains a listing of the bridges, indicating those visited by RIG/SS. In addition, we visited the Franja Transversal del Norte highway

where CHF has initiated road rehabilitation activities. For ANACAFE, we visited five of the eight stretches of rural roads in the Department of Alta Verapaz for which construction had begun at the time of our audit. Table II of Appendix III provides a listing of the roads for which construction contracts have been signed, indicating those visited during our audit.

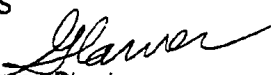
To determine whether USAID/Guatemala had implemented an adequate monitoring system for the activity, we interviewed USAID/Guatemala project officials to determine what monitoring mechanisms are in place. We also obtained copies of status reports provided by CHF and ANACAFE and site visit reports prepared by USAID/Guatemala personnel.

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DATE: September 25, 2000

TO: Timothy E. Cox, RIG/A/SS

SUBJECT: AUDIT RESPONSE OF USAID/GUATEMALA'S ROAD RECONSTRUCTION ACTIVITIES

REPLY TO: 
 ATTN OF: George Carner, Director

This is in response to your e-mail dated on August 23, 2000, transmitting the draft audit report on USAID/Guatemala's road Reconstruction Activities.

In general, the Mission concurs with the findings and recommendations of the Audit and has already taken specific actions to implement the recommendations.

As the Audit noted, this was a new activity for ANACAFE and the roads to be rehabilitated are located in remote areas where actual costs varied widely between each of the 15 road segments. In completing the 60 kilometers of road to date and purchasing the equipment, ANACAFE now has a proven road rehabilitation capability, which represents an important alternative in Alta Verapaz where the road infrastructure is the least developed in the country and suffers the most from landslides and other natural disasters. In monitoring performance under the cooperative agreement, USAID is concentrating more on ANACAFE's efforts to develop this capability. USAID also relying on ANACAFE's plans and assurances that it will complete the full 130 kilometers as scheduled, even if it has to do so with its own funds or leveraging funds from other sources. The Mission will closely monitor compliance with this goal.

The following are the Missions responses to the audit recommendations:

Recommendation No.1 We recommend that USAID/Guatemala:

- 1.1. *Obtain a firm plan of action from the ANACAFE for timely completion of the road rehabilitation program within current budgetary levels;*
- 1.2. *review the plan to determine if the completion of the program is feasible; and*

OPTIONAL FORM NO. 10
 (REV. 1-80)
 GSA FPMR (41 CFR) 101-11.6
 5010-114
 U.S. GPO: 1980-282-081/20085

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- 1.3. *if necessary determine what adjustments should be made to the project.*

ANACAFE submitted a plan to USAID for completing the remaining road segments. ANACAFE now estimates that only an additional 27 kilometers for a total of 87 kilometers of road need to be rehabilitated to fully complete the 15 road segments identified in the proposal for the cooperative agreement. The original estimate was that 130 kilometers of road were going to have to be rehabilitated to fully complete the 15 road segments.

Rather than adjusting the original goals of the cooperative agreement, ANACAFE feels that with the equipment purchased, they will be able to complete or exceed the original goal of 130 kilometers by including new road segments and mobilizing local contributions. However, the inclusion of each new road segment will require negotiations with local communities, municipalities, and cooperatives. ANACAFE has already initiated the process with these interest groups to develop a firm plan of action for the upcoming dry season. The decision of what new road segments to complete the 130 kilometers will not be finished until November 15, 2000.

Recommendation No.2: We recommend that USAID/Guatemala develop a more effective plan to (a) closely monitor the progress of the roads and bridges rehabilitation project in order to determine if progress results are being achieved; and (b) take corrective action to improve program performance in cases where they are not being achieved.

The Mission has decided to strengthen our in-house engineering capability so we can better support and monitor all of our post-Mitch infrastructure efforts, including bridges and roads, during the critical final year of implementation of post-Mitch activities. Therefore, the Mission has created a CACEDRF program financed FSN 11 Engineer position. The position has been advertised and the closing date for applications is September 27. The primary responsibility for this FSN engineer will be to review and monitor plans and timetables submitted by partners for the completion of field infrastructure projects and recommend corrective actions to improve program performance in cases where progress results are not being achieved. He/she will also monitor the timeliness, adequacy and acceptability of the engineering aspects of project construction work through field inspections, review of contractor reports, and meetings with project personnel.

OPTIONAL FORM NO. 10
(REV. 7-80)
GSA FPMR (41 CFR) 101-11.6
5010-114
U.S. GPO 1980-262-081/20026

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Based on the actions planned and already taken, we request that you concur with our management decisions; thus, consider both recommendations resolved upon issuance of the audit report.

We are very pleased with the professionalism of Mr. Kurt Clark and Mr. Matthew Rathgeber of your staff who did the field work on this assignment.

TABLE I
Cooperative Housing Foundation Bridge Construction Sites

Site Name	Length (Meters)	Start Date	Completion Date	Bridge Type	Site Visit
Cantabal	20	Feb. 2000	May 2001	Concrete	Yes
Petrolero	20	Feb. 2000	Jul. 2000	Concrete	Yes
Santo Tomas	20	Mar. 2000	Sep. 2000	Concrete	Yes
Tzutuj	20	Apr. 2000	Aug. 2000	Concrete	Yes
Cux	14	Jun. 2000	Sep. 2000	Concrete	Yes
Los Olivos	10	Aug. 2000	Oct. 2000	Concrete	Yes
KM 31.5	10	Aug. 2000	Nov. 2000	Concrete	No
KM 29.6	14	Oct. 2000	Dec. 2000	Concrete	No
KM 25.3	10	Nov. 2000	Jan. 2001	Concrete	No
KM 2.5	10	Dec. 2000	Feb. 2001	Concrete	Yes
Veracruz	15	Jan. 2001	Mar. 2001	Concrete	Yes
KM 10.7	12	Jan. 2001	Apr. 2001	Concrete	Yes
S. M. Dolores	45	Feb. 2001	May 2001	Bailey	No
La Alegría	20	Mar. 2001	May 2001	Concrete	No
Xalbal	90	Apr. 2001	Jun. 2001	Bailey	Yes

TABLE II
Asociación Nacional del Café
Road Rehabilitation Work Already Contracted

Road Name	Distance (KM)	Cost	Cost per Kilometer	Site Visit
Tzapur a Sachichá	8.0	\$72,727	\$9,091	No
Chicoj a El Manantial	2.5	\$26,682	\$10,673	No
Papalhá a Coop. Camelias	8.0	\$41,818	\$5,227	No
Papalhá a Centro Cabañas	.8	\$8,465	\$10,581	No
Cabañas a Coop. Sto. Domingo	5.3	\$33,672	\$6,353	Yes
Actelá a La Tinta	11.2	\$49,546	\$4,424	Yes
Actelá a Las Nubes	2.2	\$17,555	\$7,980	No
Actelá a Quebradas	2.7	\$27,143	\$10,053	No
Sacsuhá a Coop. Sta. Ma. San Marcos	5.5	\$38,435	\$6,988	Yes
Sepoc to Coop. Champerico	5.0	\$32,468	\$6,492	No
Champerico to Xalihá Chamil	1.0	\$13,850	\$13,850	No
Balanté to Sta. Ma. Rubeltzul	3.0	\$77,273	\$25,757	Yes
Tzalanitún to Santo Domingo	4.0	\$103,246	\$25,812	Yes
Xalihá to El Palmar	1.5	\$24,675	\$16,450	No
<i>Total</i>	<i>60.7*</i>	<i>\$567,555</i>	<i>\$9,350</i>	

*In the original work plan, the estimated total distance of these roads was 77 kilometers.

TABLE III
Asociación Nacional del Café
Road Rehabilitation Work not Contracted

Road Name	Distance (KM)
Sebas to Semococh	8
Cooperative Semarac	5
Actelá to Coop. Sto. Domingo	10
Pequixul to Chitoc	30
To be determined	16.3
<i>Total</i>	<i>69.3</i>